Site Specific Health and Safety Plan

Revision 11 9/20/2012

Project Name: Yakima Valley Dairies

Project Number: SK030326; SK030334; SK030335
Client Name: Yakima Valley Dairies
Date: 4/4/2013
Revision:

Approvals:

HASP Developer: Lisa Sebesta

HASP Reviewer: Joel Hunt

Project Manager: Kevin M. Freeman

Emergency Information

Site Address: Corner of Deckker and Zillah Rd.
Sunnyside Washington 98944

Emergency Phone Numbers:

Emergency (fire, police, ambulance)		911
Emergency (facility specific, if applicable):		
Sunnyside Community Hospital		509.837.1500
Emergency Other (specify)	Poison Control	800.332.3073
Client Contact		
WorkCare (non-lifethreatening injury/illness)		1-800.455.6155
Project H&S	John De Jong	1.408.772.5714
Task Manager	Tom Mullen	208.755.1094
Project Manager	Kevin Freeman	1.509.981.4747
Corporate H&S Specialist	Tim Hess	720.244.4931
Corporate H&S Director	Mija Coppola	410.923.7823

Hospital Name and Address:

Hospital Phone Number: 509.837.1500

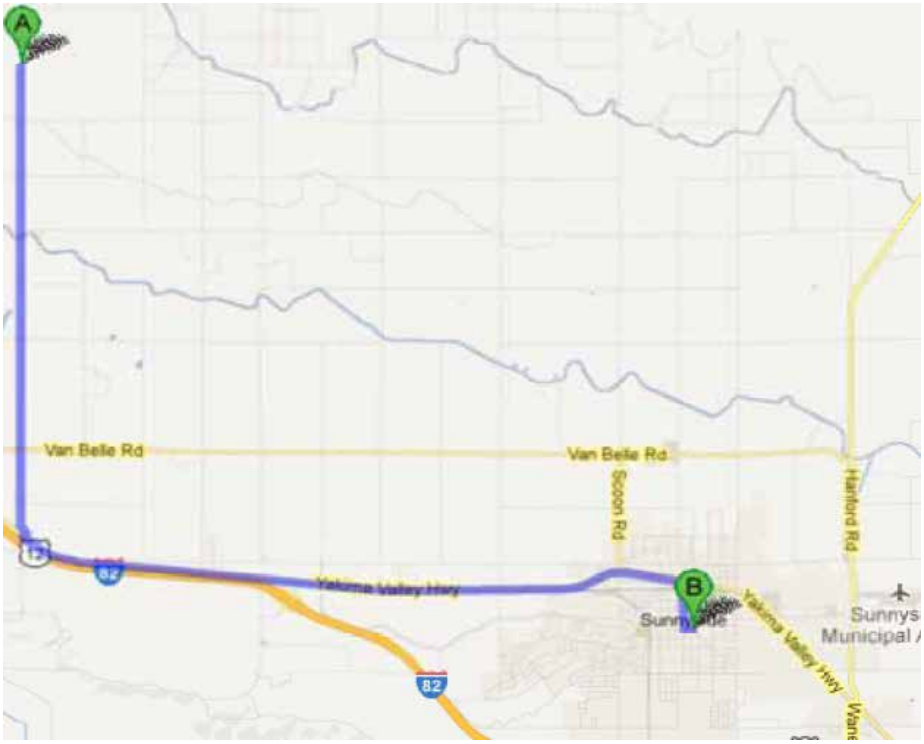
Incident Notification Process

1	Dial 911/Facility Emergency Number/WorkCare as applicable	
2	Contact PM/Supervisor	Kevin Freeman
3	Contact Corporate H&S	Mija Coppola
4	Contact Client	Henry Bosma, Liberty Dairy, LLC Privacy
		Dan DeRuyter, George DeRuyter & Son Dairy, LLC
5	Contact Client	Privacy
6	Contact Client	Adam Dolsen, Cow Palace, Privacy

Complete below, as applicable, or clear cell contents:

Location of Assembly Area(s): Outside of the exclusion zones

Route to the Hospital



A Dekker Rd

1.	Head **south** on **Dekker Rd** toward **Kellum Rd** About 11 mins	go 4.3 mi total 4.3 mi
2.	Turn left onto **Yakima Valley Hwy** About 9 mins	go 5.7 mi total 10.0 mi
3.	Turn right onto **N 9th St** About 2 mins	go 0.4 mi total 10.4 mi
4.	Turn left onto **Franklin Ave**	go 295 ft total 10.5 mi
5.	Continue onto **Tacoma Ave** Destination will be on the left	go 62 ft total 10.5 mi

B Sunnyside Community Hospital
1016 Tacoma Ave, Sunnyside, WA 98944

General Information

Site Type (select all applicable where work will be conducted):

- [x] Active
- [ ] Bridge
- [ ] Buildings
- [ ] Commercial
- [ ] Construction
- [ ] Government
- [ ] Inactive
- [ ] Industrial
- [ ] Landfill
- [ ] Marine
- [ ] Mining
- [ ] Parking Lot/Private Roadway
- [ ] Railroad
- [x] Remote Area
- [ ] Residential
- [ ] Retail
- [ ] Roadway (public, inlcuing right-of-way)
- [ ] Secure
- [ ] Unknown
- [ ] Unsecured
- [ ] Utility
- [x] Other (specify): Agricultural Land/Farm

Surrounding Area and Topography (select one):

- [ ] Surrounding area and topography are presented in the project work plan
- [x] Surrounding area and topography (*briefly describe*):
  The site is located in the Yakima Valley of Wahsington. Topograhpy is generally flat. Land use is primarily agricultural.

Site Background (select one):

- [ ] Site background is presented in the project work plan
- [x] Site background (*briefly describe)* :
  The site(s) include several major dairy operations and surrounding residential areas near Sunnyside, Washington. Presently the general land use is rural with confined animal operations and other agricultural operations. The surrounding areas are residential with a majority of them containing large tracts of land regularly farmed for agricultural production.

Project Tasks
The following tasks are identified for this project:

Examples: "Drilling/soil sampling", "Surveying", "General Inspections", "Construction Management/Inspections"

1 Drilling/Soil Sampling <= S
2 Monitoring Well Installation
3 Groundwater Monitoring
4
5

☐ Subcontractor H&S information is attached
☑ Utility clearance required.
☑ ARCADIS Field H&S Handbook sections apply *(list below)*
☑ ARCADIS Standards apply to augment JSA *[list standard(s) below]*

Comments:
H&S Standards- Dailty Safety Meetings/Tailgates, First Aid, General H&S Rules and Safe Work Permits, HASP, Stop Work, General Housekeeping, Personal Hygiene and Field Sanitation, Personal Safety and Other Unique Site Conditions, Heat Stress, Biological Hazards, Illumination, Medical Surveillance, Vehicle Safety and Driving, Daily Tailgate Meetings, Noise, Biological Hazards, and Personal Protective Equipment.

Roles and Responsibilities

	Name	*Role*	*Additional Responsibilities (Describe)*
1	Kevin Freeman	PM	
2	Tom Mullen	TM	
3	John De Jong	Field Lead	
4	John De Jong	SSO	
5			
6			

Training

All ARCADIS employees are required to have the following training:

☑ 40 hr HAZWOPER w current refresh.
☐ 24 hr HAZWOPER
☐ 10 hr Construction
☐ HazMat #1 (Ground/Air/MOT)
☑ HazMat #4 (MOT)
☐ HazCom/Emergency Action Plan
☑ H&S Orientation (classroom); or
☐ H&S Orientation (on-line)
☑ PPE
☐ Respiratory protection
☐ MSHA
☑ Smith System (on-line)
☐ OTS/eRailsafe
☐ Client specific:
☐ Other:

Selected ARCADIS employees are required to have the following additional training:

	Names or Numbers from above
☐ Not applicable	
☑ First aid/CPR/BBP	All Employees
☐ 30 hr Construction	
☐ 10 hr Construction	
☐ HazMat #1 (Gr./Air/MOT)	
☐ HazMat #4 (MOT)	
☐ Confined space entrant	
☐ Confined space rescue	
☐ Excavation CP	
☐ Electrical (NFPA 70E)	
☐ Lockout/Tagout	
☐ H&S Orientation (class)	
☐ OTS/eRailsafe	
☐ Smith Sys. (hands on)	
☐ Boating safety	
☐ Other:	

Hazard Analysis

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low.	4 - Medium.	8 - High	12 - High

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Task 1: Drilling/Soil Sampling

Hazardous Activity #1

Field-Mobilization/Demobilization - from a site

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	L	Driving	M	Electrical	L
Environmental	L	Gravity	L	Mechanical	L	Motion	L
Personal Safety	M	Pressure	L	Radiation	L	Sound	L

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:
Primary Controls TRACK Field H&S Handbook Engineering Controls

Secondary Controls JSAs Job Briefing/Site Awareness PPE (see HASP "PPE" section) Admin. Controls

Hazardous Activity #2

Field-Biological - insects, spiders, snakes, etc

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:
Primary Controls TRACK Engineering Controls PPE (see HASP "PPE" section)

Secondary Controls JSAs HASP Job Briefing/Site Awareness PPE (see HASP "PPE" section) Housekeeping

Hazardous Activity #3

Field-Utilities- pre-clearing utilities by manual means (auger, probe, shovel, etc)

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	L	Driving	-	Electrical	L
Environmental	-	Gravity	M	Mechanical	M	Motion	M
Personal Safety	-	Pressure	M	Radiation	-	Sound	M

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:
Primary Controls TRACK H&S Standards Job Briefing/Site Awareness PPE (see HASP "PPE" section) JSAs

Secondary Controls Specialized Equipment Engineering Controls Admin. Controls

Hazardous Activity #4

Field-Drilling - Mechanical method (drill rig, DPT, etc)

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	L	Driving	-	Electrical	M
Environmental	-	Gravity	H	Mechanical	H	Motion	H
Personal Safety	-	Pressure	M	Radiation	-	Sound	H

Overall Unmitigated Risk: High Mitigated Risk: Medium if utilizing:
Primary Controls TRACK Engineering Controls Admin. Controls PPE (see HASP "PPE" section) JSAs Inspections

Secondary Controls Job Briefing/Site Awareness H&S Standards Cont/Emerg. Planning

Hazardous Activity #5

Field-Sampling - sample cooler preparation

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	M	Driving	-	Electrical	-
Environmental	-	Gravity	M	Mechanical	L	Motion	L
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:

Primary Controls TRACK JSAs Engineering Controls PPE (see HASP "PPE" section) See HASP "Monitoring" section

Secondary Controls Job Briefing/Site Awareness Admin. Controls Work Plan

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low.	4 - Medium.	8 - High	12 - High

Task 2: Monitoring Well Installation

Hazardous Activity #1

Field-Mobilization/Demobilization - from a site

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	L	Driving	M	Electrical	-
Environmental	-	Gravity	M	Mechanical	-	Motion	L
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:

Primary Controls TRACK Field H&S Handbook Engineering Controls

Secondary Controls JSAs Job Briefing/Site Awareness PPE (see HASP "PPE" section) Admin. Controls

Hazardous Activity #2

Field-Biological - insects, spiders, snakes, etc

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:

Primary Controls TRACK Engineering Controls PPE (see HASP "PPE" section)

Secondary Controls JSAs HASP Job Briefing/Site Awareness PPE (see HASP "PPE" section) Housekeeping

Additional Controls Field personnel will not be working alone, but will be working in teams of two.

Hazardous Activity #3

Field-Measurement - water levels and well sounding

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	L	Driving	-	Electrical	-
Environmental	-	Gravity	L	Mechanical	-	Motion	M
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Low Mitigated Risk: Low if utilizing:

Primary Controls TRACK JSAs PPE (see HASP "PPE" section)

Hazard Analysis

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low.	4 - Medium.	8 - High	12 - High

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Task 3: Groundwater Monitoring

Hazardous Activity #1

Field-Mobilization/Demobilization - from a site

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	L	Driving	M	Electrical	L
Environmental	L	Gravity	L	Mechanical	L	Motion	L
Personal Safety	M	Pressure	L	Radiation	L	Sound	L

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:
Primary Controls TRACK Field H&S Handbook Engineering Controls

Secondary Controls JSAs Job Briefing/Site Awareness PPE (see HASP "PPE" section) Admin. Controls

Hazardous Activity #2

Field-Biological - insects, spiders, snakes, etc

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:
Primary Controls TRACK Engineering Controls PPE (see HASP "PPE" section)

Secondary Controls JSAs HASP Job Briefing/Site Awareness PPE (see HASP "PPE" section) Housekeeping

Hazardous Activity #3

Field-Sampling - monitoring well sampling with electric, pneumatic or other non-manual pump

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	M	Chemical	L	Driving	-	Electrical	L
Environmental	-	Gravity	L	Mechanical	-	Motion	M
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Low Mitigated Risk: Low if utilizing:
Primary Controls TRACK JSAs Engineering Controls PPE (see HASP "PPE" section) Inspections

Secondary Controls Job Briefing/Site Awareness

Hazardous Activity #4

General-Lifting and movement of equipment of varying weights at varying frequencies by manual methods

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Medium if utilizing:
Primary Controls #N/A

Secondary Controls JSAs Job Briefing/Site Awareness Specialized Equipment Admin. Controls Engineering Controls

Hazardous Activity #5

Field-Sampling - sample cooler preparation

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	M	Driving	-	Electrical	-
Environmental	-	Gravity	M	Mechanical	L	Motion	L
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing:

Primary Controls TRACK JSAs Engineering Controls PPE (see HASP "PPE" section) See HASP "Monitoring" section

Secondary Controls #N/A

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low.	4 - Medium.	8 - High	12 - High

Hazard Communication (HazCom)/Global Harmonization System (GHS)

☐ HAZCOM/GHS for this project is managed by the client or general contractor

*List the chemicals anticipated to be used by **ARCADIS** on this project per HazCom/GHS requirements.*
(Modify quantities as needed)

	Acids/Bases	Qty
☐	Not applicable	
☐	Hydrochloric acid	<500 ml
☑	Nitric acid	<500 ml
☑	Sulfuric acid	<500 ml
☐	Sodium hydroxide	<500 ml
☐	Zinc acetate	<500 ml
☐	Ascorbic acid	<500 ml
☐	Acetic acid	<500 ml
☐	Other:	
	_____	
	_____	
	_____	

	Decontamination	Qty
☐	Not applicable	
☑	Alconox	≤ 5 lbs
☑	Liquinox	≤ 1 gal
☐	Acetone	≤ 1 gal
☐	Methanol	≤ 1 gal
☐	Hexane	≤ 1 gal
☐	Isopropyl alcohol	≤ 4 gal
☐	Nitric acid	≤ 1 L
☐	Other:	
	_____	
	_____	
	_____	

	Calibration	Qty.
☐	Not applicable	
☐	Isobutylene/air	1 cyl
☐	Methane/air	1 cyl
☐	Pentane/air	1 cyl
☐	Hydrogen/air	1 cyl
☐	Propane/air	1 cyl
☐	Hydrogen sulfide/air	1 cyl
☐	Carbon monoxide/air	1 cyl
☑	pH standards (4,7,10)	≤ 1 gal
☑	Conductivity standards	≤ 1 gal
☐	Other:	
	_____	

	Fuels	Qty.
☑	Not applicable	
☐	Gasoline	≤ 5 gal
☐	Diesel	≤ 5 gal
☐	Kerosene	≤ 5 gal
☐	Propane	1 cyl
☐	Other:	
	_____	

	Kits	Qty.
☑	Not applicable	
☐	Hach (specify): _____	1 kit
☐	DTECH (specify): _____	1 kit
☐	EPA 5035 Soil (specify kit): _____	1 kit
☐	Other:	
	_____	
	_____	

	Remediation	Qty.
☐	Not applicable	
☐	_____	
☐	_____	
☐	_____	
☐	_____	
☐	_____	

	Other:	Qty.
☐	Not applicable	
☐	Spray paint	≤ 6 cans
☐	WD-40	≤ 1 can
☐	Pipe cement	≤ 1 can
☐	Pipe primer	≤ 1 can
☐	Mineral spirits	≤ 1 gal

	Qty.
☐ _____	
☐ _____	
☐ _____	
☐ _____	
☐ _____	
☐ _____	

Material safety data sheets (MSDSs)/Safety Data Sheets (SDSs) must be available to field staff. Indicate below how MSDS information will be provided:

☐ Not applicable
☐ Printed copy in company vehicle
☐ Printed copy in the project trailer/office
☐ Printed copy attached
☑ Electronic copy on field computer

☐ Contractor MSDSs/SDSs are not applicable
☐ Contractor MSDSs/SDSs are attached
☐ Contractor MSDSs/SDSs will be on site and located: _____

☐ Bulk quantities of the following materials will be stored: _____

Contact the project H&S contact for information in determining code and regulatory requirements associated with bulk storage of materials.

Monitoring

☑ Chemical air monitoring is not required for this project.

For projects requiring air monitoring, list the relevant constituents representing a hazard to site workers.

Constituent	Max. Conc.	Units	TWA	Units	STEL	Units	IDLH	Units	LEL/UEL (%)	VD Air=1	VP (mm Hg)	IP (eV)
None			9999	-	0	-	0	-	0	0	0	0
None			9999		0	-	0	-	0	0	0	0
None			9999	-	0	-	0	-	0	0	0	0
None			9999	-	0	-	0	-	0	0	0	0
None			9999	-	0	-	0	-	0	0	0	0
None			9999	-	0	-	0	-	0	0	0	0

Notes: TWAs are ACGIH 8 hr-TLVs unless noted.
p-ppm s- skin r- resipirable
m-mg/m3 c-ceiling i-inhalable
c2- ceiling (2 hr) "9999" - NA N-NIOSH 10 hr REL
se-sensitizer O-OSHA PEL
"#N/A" -Constituent is not in database, manually enter information

Monitoring Equipment and General Protocols

Air monitoring is required for any task or activity where employees have potential exposure to vapors or particulates above the TWA. Action levels below are appropriate for most situations. Contact the project H&S contact for all stop work situations. Select monitoring frequency and instruments to be used.

Monitoring Frequency:	
Indicator Tube/Chip Frequency:	>PID/FID action level per SSO instructions

	Instrument	Action Levels			Actions
☐	Photoionization Detector		<	0.000	Continue work
		0.000	-	0.0	Sustained >5 min. continuous monitor, review eng. controls and PPE, proceed with caution
	Lamp (eV):		>	0.0	Sustained >5 min. stop work, contact SSO
☐	Flame Ionization Detector (FID)		<	0.0	Continue work
		0.0	-	0.0	Sustained >5 min. continuous monitor, review eng. controls and PPE, use caution
			>	0.0	Sustained >5 min. stop work, contact SSO
☐	LEL/O2 Meter	0-10% LEL			Continue work
		>10-25% LEL			Continuous monitor, review eng. controls, proceed with caution
		>25% LEL			Stop work, evacuate, contact SSO
		19.5%-23.5% O2			Normal, continue work
		<19.5% O2			O2 deficient, stop work, evacuate, cont. SSO
		>23.5% O2			O2 enriched, stop work, evacuate, contact SSO
☐	Indicator: ☐tube ☐hip	≤PEL/TLV			Continue work
		>PEL/TLV			Stop work, review eng. controls and PPE,
	Compound(s):				contact SSO
☐	Particulate Monitor (mists, aerosols, dusts in mg/m^3)		<	2.5	Continue work
		2.5	-	5.00	Use engineering controls, monitor continuously
			>	5.00	Stop work, review controls, contact SSO
☐	Other:	Specify:			Specify:

Personal Protective Equipment (PPE)

See JSA for the task being performed for PPE requirements. *If the work is not conducted under a JSA, refer to the governing document for PPE requirements. At a minimum, the following checked PPE is required for all tasks during field work not covered by a JSA on this project:*

Level D or Level D Modified:

☑ Hard hat	☐ Snake chaps/guards	☐ Coveralls:		Specify Type:
☑ Safety glasses	☐ Briar chaps	☐ Apron:		
☐ Safety goggles	☐ Chainsaw chaps	☐ Chem. resistant gloves:		
☐ Face shield	☐ Sturdy boot	☑ Gloves other:		Nitrile
☑ Hearing protection	☑ Steel toe boot	☐ Chemical boot:		
☐ Rain suit	☐ Metatarsal boot	☑ Boot other:		Disposable boot covers
☐ Other:		☑ Traffic vest:		As needed
		☐ Life vest:		

Task specific PPE:

Comments:

Medical Surveillance (*check all that apply*)

- ☐ Medical Surveillance is not required for this project.
- ☑ HAZWOPER medical surveillance applies to all ARCADIS site workers on the project.
- ☐ HAZWOPER medical surveillance applies to all subcontractors on the project.
- ☐ HAZWOPER medical surveillance applies to all site workers on the project except:

- ☐ Other medical surveillance required (describe type and who is required to participate):

- ☐ Client drug and/or alcohol testing required.

Hazardous Materials Shipping and Transportation (*check all that apply*)

- ☐ Not applicable, no materials requiring a Shipping Determination will be transported or shipped
- ☑ A Shipping Determination has been reviewed and provided to field staff
- ☐ A Shipping Determination is attached
- ☐ All HazMat will be transported under Materials of Trade by ARCADIS
- ☐ Other (specify):

Roadway Work Zone Safety (*check all that apply*)

- ☑ Not applicable for this project
- ☐ All or portions of the work conducted under a TCP
- ☐ All or portions of the work conducted under a STAR Plan
- ☐ TCP or STAR Plan provided to field staff
- ☐ TCP or STAR Plan attached
- ☐ Other (specify):

ARCADIS Commercial Motor Vehicles (CMVs)

This section is applicable to ARCADIS operated vehicles only

- ☑ This project will **not** utilize CMV drivers
- ☐ This project will utilize CMV drivers

Site Control (*check all that apply*)

- ☐ Not applicable for this project.
- ☑ Site control protocols are addressed in JSA or other supporting document (attach)
- ☑ Maintain an exclusion zone of 25 ft. around the active work area
- ☐ Site control is integrated into the STAR Plan or TCP for the project
- ☐ Level C site control - refer to Level C Supplement attached
- ☐ Other (specify):

Decontamination (*check all that apply*)

- ☐ Not applicable for this project.
- ☐ Decontamination protocols are addressed in JSA or other governing document (attach)
- ☑ Level D work- wash hands and face prior to consuming food, drink or tobacco.
- ☐ Level D Modified work- remove coveralls and contain, wash hands and face prior to consuming food, drink or tobacco. Ensure footwear is clean of site contaminants
- ☐ Level C work - refer to the Level C supplement attached.
- ☐ Other (specify):

Sanitation *(check all that apply)*

- ☑ Mobile operation with access to off-site restrooms and potable water
- ☐ Restroom facilities on site provided by client or other contractor
- ☐ Project to provide portable toilets (1 per 20 workers)
- ☐ Potable water available on site
- ☑ Project to provide potable water (assume 1 gal./person/day)
- ☐ Project requires running water (hot and cold, or tepid) with soap and paper towels

Safety Briefings (*check all that apply*)

- ☑ Safety briefing required daily
- ☐ Safety briefing required twice a day
- ☐ Safety briefings required at the following frequency: _____
- ☑ Subcontractors to participate in ARCADIS safety briefings
- ☐ ARCADIS to participate in client/contractor safety briefings
- ☐ Other (specify):

Safety Equipment and Supplies

Safety equipment/supply requirements are addressed in the JSA for the task being performed. *If work is not performed under a JSA, the following safety equipment is required to be present on site in good condition (Check all that apply):*

- ☑ First aid kit
- ☐ Bloodborne pathogens kit
- ☑ Fire extinguisher
- ☐ Eyewash (ANSI compliant)
- ☑ Eyewash (bottle)
- ☑ Drinking water
- ☑ Other: Tick removal kit

- ☑ Insect repellent
- ☑ Sunscreen
- ☐ Air horn
- ☐ Traffic cones
- ☐ 2-way radios
- ☐ Heat stress monitor

H&S Program (*check all that apply*)

- ☐ H&S metrics are provided on the account level, refer to account guidance
- ☑ TIP required at the following frequency on this project:
  Select One: _____ mhrs _____ time(s) _____ Define: 1/week
- ☐ H&S Field Assessment required at the following frequency on this project:
  Select One: _____ mhrs _____ time(s) _____ Define: _____
- ☐ Other (specify):

List tasks anticipated for TIP activity:

Drilling & MW Installation

Signatures

I have read, understand and agree to abide by the requirements presented in this health and safety plan. I understand that I have the absolute right to stop work if I recognize an unsafe condition affecting my work until corrected.

Printed Name	Signature	Date

Add additional sheets if necessary

- ☐ Subcontractor Acknowledgement Form attached

You have an absolute right to STOP WORK if unsafe conditions exist!

HASP Forms

ARCADIS

Document Control Number:TGM - _____

TGM + *project number plus date as follows: xxxxxxxx.xxxx.xxxxx - dd/mm/year*

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:			**Project Location:**
Date:	**Time:**	**Conducted by:**	**Signature/Title:**
Client:		**Client Contact:**	**Subcontractor companies:**

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 _____ 3 _____ 5 _____

2 _____ 4 _____ 6 _____

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐ If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #		Doc #
☐ Not applicable		☐ Working at Height		☐ Confined Space	
☐ Energy Isolation (LOTO)		☐ Excavation/Trenching		☐ Hot Work	
☐ Mechanical Lifting Ops		☐ Overhead & Buried Utilities		☐ Other permit	

Discuss following questions (for some review previous day's post activities). **Check if yes :**

☐ Incidents from day before to review?	☐ Lessons learned from the day before?	☐ Any Stop Work Interventions yesterday?
☐ Any corrective actions from yesterday?	☐ Will any work deviate from plan?	☐ If deviations, notify PM & client
☐ JLAs or procedures are available?	☐ Field teams to "dirty" JLAs, as needed?	☐ All equipment checked & OK?
☐ Staff has appropriate PPE?	☐ Staff knows Emergency Plan (EAP)?	☐ Staff knows gathering points?

☐ Topics from Corp H&S to cover?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

☐ Gravity (i.e., ladder, scaffold, trips) (L M H)	☐ Motion (i.e., traffic, moving water) (L M H)	☐ Mechanical (i.e., augers, motors) (L M H)
☐ Electrical (i.e., utilities, lightning) (L M H)	☐ Pressure (i.e., gas cylinders, wells) (L M H)	☐ Environment (i e., heat, cold, ice) (L M H)
☐ Chemical (i.e., fuel, acid, paint) (L M H)	☐ Biological (i.e., ticks, poison ivy) (L M H)	☐ Radiation (i.e., alpha, sun, laser) (L M H)
☐ Sound (i.e., machinery, generators) (L M H)	☐ Personal (i.e. alone, night, not fit) (L M H)	☐ Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

- [x] **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (*See statements below*)

☐ Elimination	☐ Substitution	☐ Isolation
☐ Engineering controls	☐ Administrative controls	☐ Monitoring
☐ General PPE Usage	☐ Hearing Conservation	☐ Respiratory Protection
☐ Personal Hygiene	☐ Exposure Guidelines	☐ Decon Procedures
☐ Emergency Action Plan (EAP)	☐ Fall Protection	☐ Work Zones/Site Control
☐ JLA to be developed/used ***(specify)***	☐ LPO conducted ***(specify job/JLA)***	☐ Traffic Control
☐	☐	☐ Other ***(specify)***
☐	☐	☐

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to he supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will STOP he job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB,** I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will not assist a subcontractor or other party wi h their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- ☐ Lessons learned and best practices learned today: _____
- ☐ Incidents that occurred today: _____
- ☐ Any Stop Work interventions today? _____
- ☐ Corrective/Preventive Actions needed for future work: _____
- ☐ Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

Employee Signature Form

I certify that I have read, understand, and will abide by the safety requirements outlined in this HASP.

Printed Name	Signature	Date

Subcontractor Acknowledgement: Receipt of HASP Signature Form

ARCADIS claims no responsibility for the use of this HASP by others although subcontractors working at the site may use this HASP as a guidance document. In any event, ARCADIS does not guarantee the health and/or safety of any person entering this site. Strict adherence to the health and safety guidelines provided herein will reduce, but not eliminate, the potential for injury at this site. To this end, health and safety becomes the inherent responsibility of personnel working at the site.

Printed Name	Company	Signature	Date

Visitor Acknowledgement and Acceptance of HASP Signature Form

By signing below, I waive, release and discharge the owner of the site and ARCADIS and their employees from any future claims for bodily and personal injuries which may result from my presence at, entering, or leaving the site and in any way arising from or related to any and all known and unknown conditions on the site.

Name	Company	Reason for Visit	Date/Time On Site	Date/Time Off Site

Hazardous Materials Transportation Form

	Vehicle (place X in box)	Type (pick-up, car, box truck, etc.)
Personal		
Rental		
ARCADIS owned/leased		
Government owned		
Trailer		

Materials Transported	Quantity	Storage/Transport Container

List Trained Drivers:

_____

_____

Hazardous Materials Shipment Form

Material Description and Proper Shipping Name (per DOT or IATA)	Shipment Quantity	DOT Hazard Classification	Shipment Method (air/ground)

List Shipper (i.e., who we are offering the shipment to):

_____

_____

List Trained Employee(s):

_____

_____

ARCADIS

WEEKLY "WALK-AROUND"

Office Location: _____ Vehicle/Plate Number:_____

1. Check under the hood; 2. Examine exterior; 3. Check for leaks under hood and exterior; 4. Test brakes, steering, transmission; and, 5. Examine interior.

"S" = satisfactory or "NS"= not satisfactory. If "NS" is noted, please explain below and include what corrective action was taken and the date it was taken.

	Date/Initials	S or NS	Date/Initials	S or NS	Date/Initials	S or NS	Date/Initials	S or NS	Date/Initials	S or NS	Date/Initials	S or NS	Date/Initials	S or NS
Odometer Reading														
Inside:														
Side & Rear-View Mirrors														
Horn and Door Locks														
Windshield wipers														
Heater, Defroster, AC														
Interior Lights & Panel/Gages														
Flashers & Turn Signals														
Parking & Emergency Brake														
Steering Wheel (excessive play?)														
Clutch (if applicable)														
Engine:														
Engine (start without problem?)														
Fluid Levels & Belts														
Noticeable Leaks														
Exterior:														
Lights, Flashers, Signals, Reflectors														
Tires (condition, inflation)														
Cargo Area/Tie-Downs Secure														
License Tags – Check Status (Date)														

Checked by – Name and initials

1. 3. 5. 7.

2. 4. 6. 8.

Explanation:_____

JSAs

Job Safety Analysis

General

JSA ID	8457	**Status**	(3) Completed
Job Name	General Industry-Driving - passenger vehicles	**Created Date**	11/8/2012
Task Description	Driving Company Van or Passenger Vehicle to, from, and on-site	**Completed Date**	11/21/2012
Template	False	**Auto Closed**	False

Client / Project

Client	UTC
Project Number	039940200001
Project Name	Post-RA GW Mon
PIC	SAUDA, DONALD F
Project Manager	KAZZI, LANCE

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Whipple, Curtis	11/26/2012	11/12/2012	Nelson, Bruce	☑
HASP Reviewer	Bobar, Aaron	11/26/2012	11/21/2012	Lang, Daniel	☑
Quality Reviewer	Castele, Daniel	11/23/2012	11/23/2012	Stewart, Stephen	☑

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Pre-Trip Inspection	1	Failure to perform inspection may lead to an accident, damage to the vehicle or regulatory citation.	Perform required pre-trip inspections by checking general condition of the vehicle on all sides. Do not operate a vehicle with an identified deficiency that will affect operation of the vehicle. Ensure emergency equipment is present, in good condition and unobstructed.	
2	Cargo Inspection	1	Failure to inspect cargo may lead to unstable vehicle operation, damage to cargo or vehicle, accident or regulatory citation.	Inspect cargo: Loaded properly in bed of truck, van, or on trailer, adequately secured to prevent movement, inspect securing devices. Use edge protection if sharp edged cargo is present and using tiedowns. Use flagging to mark projecting loads.	
3	Driving the Vehicle	1	Improper operation of a vehicle may result in accident, injury, death or regulatory citation.	Operate according to local speed and traffic laws. Only drive in approved lanes, where regulated. Maintain Smith System 5 Keys while driving, add seconds to 4 second rule when carrying heavy cargo. Keep eyes moving in all directions, including vertically. All devices such as cell phones, etc. must be powered off when driving the vehicle. Stop the vehicle in a safe parking area prior to using a mobile device or programing navigation systems. Use warning devices when stopped on side of roadway.	
4	Slowing and Stopping the vehicle	1	Improper braking or stopping of a vehicle may cause load shifts damaging cargo or vehicle, create accident by rear ending other vehicles, or cause vehicle to be struck by other vehicle or train.	Brake early and gradually, slow and proceed with caution at railroad grade crossings. Stop at railroad grade crossings if transporting placarded quantity of hazmat per ARCADIS Transportation Safety Program.	
5	Backing and Parking	1	Improper backing may result in striking other objects or persons, cause trailer to jackknife causing damage to trailer, truck or cargo.	Avoid situations where backing will be required. Use Smith System, GOAL prior to backing or ARCADIS spotter program. Plan all backing. Back slowly 1-3 mph. Keep eyes moving continuously and monitor front of the CMV as well as back of the CMV when backing. Avoid blind side backing situations.	DOT Facts 005a

5	Backing and Parking	2	Improper parking of CMV or trailer may create difficulty in leaving parking area potentially resulting in accident, or result in regulatory citation if parked illegally.	Use pull through parking when permitted. Park in open areas of parking lots and select routes that reduce exposure to pedestrians in parking lots. Use horn in a proactive manner to communicate with other drivers and pedestrians.	

PPE — Personal Protective Equipment

Type	Personal Protective Equipment	Description	Required
Hand Protection	work gloves (specify type)	Leather or other during trailer coupling	Required
Miscellaneous PPE	traffic vest--Class II or III		Required

Supplies

Type	Supply	Description	Required
Miscellaneous	fire extinguisher		Required
	first aid kit		Required
	flashlight		Required
	Other	Spare fuses	Required
Traffic Control	Other	Warning devices (triangles, etc.)	Required

Review Comments

Reviewer		Comments
Employee: **Role** **Review Type** **Completed Date**	Bobar, Aaron HASP Reviewer Revise 11/11/2012	The HASP you provided indicates that CMV will not apply to this project - are you driving an CMV, and if so, what type? If not - use the JSA template for passenger vehicles, or revise this JSA to remove references to CMV. Also, you may want to add a reminder that cell phones must be turned off while driving. Thanks!
Employee: **Role** **Review Type** **Completed Date**	Bobar, Aaron HASP Reviewer Approve 11/21/2012	As per our discussion, this looks good... Thanks
Employee: **Role** **Review Type** **Completed Date**	Castele, Daniel Quality Reviewer NA 11/23/2012	Good point regarding CMV versus passenger vehicles. Otherwise JSA is very thorough.

Job Safety Analysis

General

JSA ID	6742	**Status**	(3) Completed
Job Name	Environmental-Drilling, soil sampling, well installation	**Created Date**	2/2/2012
Task Description	Dilling-soil borings, Soil Boring Sampling, Well Installation	**Completed Date**	02/24/2012
Template	False	**Auto Closed**	False

Client / Project

Client	JOSLYN MANUFACTURING COMPANY LLC
Project Number	SK0093500008
Project Name	JOSLYNMANUFACT/FRMR POLE YARD 08-09
PIC	
Project Manager	LYON, PAULA

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Sebesta, Lisa	2/23/2012	2/2/2012	Freeman, Kevin	☑
HASP Reviewer	Byers, Susan	2/16/2012	2/3/2012	Edwards, Lauren	☐
Quality Reviewer	Babcock, Jim	3/21/2012	3/21/2012	Stanin, Frederick Theodore	☑
Reviewer	Lyon, Paula	2/16/2012	2/24/2012	Sprick, Grant	☑

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Set up necessary traffic and public access controls	1	Struck by vehicle due to improper traffic controls	Use a buddy system for placing site control cones and/or signage. Position vehicle so that you are protected from moving traffic. Wear Class II traffic vest	
2	Utility Clearance	1	Potential to encounter underground or aboveground utilities while drilling.	Complete utility clearance in accordance with the ARCADIS Utility Clearance H&S Standard.	ARCADIS H&S Standard ARCHSFS019
3	General drill rig operation	1	Excessive noise is generated by rig operation.	When the engine is used at high RPMs or soil samples are being collected, use hearing protection.	
		2	During drill rig operation, surfaces will become hot and cause burns if touched, and COCs in the soils more readily vaporize generating airborne contaminates.	Due to friction and lack of a drilling fluid, heat will be produced during this method. Mainly drill augers. Be careful handling split spoons. Wear proper work gloves. When soils and parts become heated, the COC could volatilize. Air monitoring should always be performed in accordance with the HASP.	
		3	Moving parts of the drilling rig can pull you in causing injury. Pinch points on the rig and auger connections can cause pinching or crushing of body parts.	Stay at least 5 feet away from moving parts of the drill rig. Know where the kill switch is, and have the drillers test it to verify that it is working. Do not wear loose clothing, and tie long hair back. Avoid wearing jewelry while drilling. Cone off the work area to keep general public away from the drilling rig.	
		4	Dust and debris can cause eye injury and soil cuttings and/or water could contain COCs.	Wear safety glasses and stay as far away from actual drilling operation as practicable. Wear appropriate gloves to protect from COCs.	
		5	Drilling equipment laying on the ground (i.e. augers, split spoons, decon equipment, coolers, etc), create a tripping hazard. Water from decon buckets generate mud and cause a slipping hazard.	Keep equipment and trash picked up, and store away from the primary work area.	
		6	The raised derrick can strike overhead utilities, tree limbs or other elevated items	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick, and that you are far enough away from overhead power lines. See the Utility Clearance H&S Standard for guidance.	

4	Mudd Rotary Drilling	1	The raised derrick can strike overhead utilities, tree limbs or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick, and that you are far enough away from overhead power lines. See the Utility Clearance H&S Standard for guidance.	
		2	This technology uses fluid, which collects with sediments in large basin. Fluid can splash out and cause slipping/mud hazard. Liquid mixture can splash into your eyes.	Wear rubber boots if needed, and keep clear of muddy/wet area as much as practicable. If area becomes excessively muddy, consider mud spikes or covering the area with a material that improves traction. Wear safety glasses.	
5	Hollow Stem Auger Drilling	1	All hazards in step 3 apply. Additionally, the raised derrick can strike overhead utilities, tree limbs or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick, and that you are far enough away from overhead power lines. See the Utility Clearance H&S Standard for guidance.	
6	Air Rotary Drilling	1	This drilling method works with high air pressure and can generate flying debris that can str ke your body or get in your eyes.	When the drill rig is being driven into media, it will produce flying debris. The flaps behind the drill rig should stay closed whenever possible to reduce the risk of flying debris. Safety glasses and hard hat should always be worn when the drill rig is operating. When penetrating asphalt protect surrounding cars that may be present to avoid damage to paint or windshields.	
		2	The raised derrick can strike overhead utilities, tree limbs or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick, and that you are far enough away from overhead power lines. See the Utility Clearance H&S Standard for guidance.	
		3	When drilling through bedrock prior to groundwater, dust can be produced from pulverization. Inhalation of dusts/powder can occur.	Supplemental water should be used to manage dust and/or dust masks should be used if necessary.	
7	Reverse Rotary Drilling	1	This method will use fresh water to pump out drill cuttings through the center of the casing. Water/sediment mixture is generated and could cause contact with impacted soils or groundwater.	Ensure the pit construction can hold the amount of cuttings that are anticipated. Air monitoring should also be used of pit area.	
		2	Fire hydrants are often used for water source. Hydrants deliver water at high pressure. Pressurized water can cause flying parts/debris and excessive slipping hazards.	Water usage from fire hydrants should be cleared with local muncipalities prior to use. Only persons that know how to use the hydrant should be performing this task. Ensure all connections are tight, and hose line is not run over and cut by traffic. Any leaks from the hydrant should be reported immediately.	
		3	Settling pit construction can cause tripping hazard from excavated soils, and plastic sheeting can cause slipping.	Cone off the area to keep the general public/visitors away from the settling pit. Ensure proper sloping of excavation.	
		4	The raised derrick can strike overhead utilities, tree limbs or other elevated items.	Never move the rig with the derrick up. Ensure there is proper clearance to raise the derrick, and that you are far enough away from overhead power lines. See the Utility Clearance H&S Standard for guidance.	
8	Direct push drilling	1	The drill rods will be handled by workers most of the time rather than the rig doing it, therefore pinch points can cause lacerations and crushing of fingers/body parts.	Keep a minimum of 5 feet away from drill rig operation and moving parts.	
		2	The direct push rigs are uaually meant to fit in spaces where larger rig can't. Tight spaces can pin workers.	Do not put yourself between the rig and a fixed object. Use Spotters or a tape measure to ensure clearances in tight areas. Pre-plan equipment movement from one location to the next.	

8	Direct push drilling	3	Some direct push equipment is controlled by wireless devices. These controls can fail and equipment can str ke workers or cause damage to property.	The drill rig should be used in a large open area to test wireless controls prior to moving to boring locations. The operator of the rig will test the kill switch with wireless remote prior to use. Operator will stay in range of rig while moving so that wireless signal will not be too weak and cause errors to the controls.	
		4	Sampling sleeves must be cut to obtain access to soil. Cutting can cause lacerations.	It's preferable to let the driller cut the sleeves open. Many drillers have holders for the sleeve to allow for stability when cutting. If you cut the sleeves, use a hook blade, change blade regularly, and cut away from the body.	
9	Sample collection and processing	1	Injuries can result from pinch points on sampling equipment, and from breakage of sample containers.	Care should be taken when opening sampling equipment. Look at empty containers before picking them up, and do not over-tighten container caps. Use dividers to store containers in the cooler so they do not break.	Sample Cooler Handling JSA
		2	Lifting heavy coolers can cause back injuries.	Use two people to move heavy coolers. Use proper lifting techniques.	
10	Monitoring well installation	1	Same hazards as in Step 3 with general drill rig operation	See step 3	
		2	Monitoring well construction materials can clutter the work area causing tripping hazards.	Well construction materials should be picked up during the well installation process.	
		3	Heavy lifting can cause muscle strains, and cutting open bags can cause lacerations.	Well construction materials are usually 50 lbs or greater. Team lift or use drill rig to hoist bags. Always use work gloves while cutting open bags.	
		4	Well pack material (i.e. sand, grout, bentonite) can become airborne and get in your eyes.	Wear safety glasses for protection from airborne sand and dust.	
		5	Cutting the top of the well to size can cause jagged/sharp edges on the top of the well casing.	Wear gloves when working with the top of the well casing, and file any sharp jagged edges that resulted from cutting to size.	
11	Soil cutting and purge water management	1	Moving full drums can cause back injury, or pinching/crushing injury.	Preferably have the drilling contractor move full drums with their equipment. If this is not practicable, use lift assist devices such as drum dollys, lift gates, etc. Employ proper lifting techniques, and perfrom TRACK to identify pinch/crush points. Wear leather work gloves, and clear all walking and work areas of debris prior to moving a drum.	Drum Handling JSA

PPE — Personal Protective Equipment

Type	Personal Protective Equipment	Description	Required
Eye Protection	safety glasses		Required
Foot Protection	steel-toe boots		Required
Hand Protection	chemical resistant gloves (specify type)		Required
	work gloves (specify type)	leather	Required
Head Protection	hard hat		Required
Hearing Protection	ear plugs		Required
Miscellaneous PPE	traffic vest--Class II or III		Required
Respiratory Protection	dust mask		Recommended

Supplies

Type	Supply	Description	Required
Communication Devices	mobile phone		Required
Decontamination	Decon supplies (specify type)		Required
Miscellaneous	fire extinguisher		Required
	first aid kit		Required
Personal	eye wash (specify type)	bottle	Required
Traffic Control	traffic cones		Required

Review Comments

Reviewer		Comments
Employee: **Role** **Review Type** **Completed Date**	Byers, Susan HASP Reviewer Approve 2/3/2012	Just FYI - If you're not adding steps or tasks on the JSA, you can just print out the template and make changes as necessary on the hard copy - or export it to excel and modify as needed.
Employee: **Role** **Review Type** **Completed Date**	Lyon, Paula Reviewer Approve 2/24/2012	
Employee: **Role** **Review Type** **Completed Date**	Babcock, Jim Quality Reviewer NA 3/21/2012	Good JSA Job Step No, 4 - Mud in Mud Rotary Method is spelled with one "m"

Job Safety Analysis

General

JSA ID	8911	**Status**	(3) Completed
Job Name	Environmental-Groundwater Sampling and free product recovery	**Created Date**	2/28/2013
Task Description	Groundwater Sampling (No FP)	**Completed Date**	04/17/2013
Template	False	**Auto Closed**	True

Client / Project

Client	CHEVRON CORPORATION
Project Number	B00064430005
Project Name	204545 - Y1Q1-Y1Q2
PIC	FLEISCHNER, MICHAEL
Project Manager	SONDERS, DAVID

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Small, Jamie	3/21/2013	3/20/2013	Kappes, Richard	☑
HASP Reviewer	Mason, Greg	4/3/2013		Mattingly, James	☑
Quality Reviewer	Nail, Jason	4/19/2013	4/19/2013	Blanchette, Melissa	☑

Job Steps

Job Step No.	Job Step Description		Potential Hazard	Critical Action	H&S Reference
1	Stage at pre-determined sampling location and set up work zone and sampling equipment	1	Personnel could be hit by vehicular traffic	Set up cones and establish work area. Position vehicle so that field crew is protected from site traffic. Unload as close to work area as safely possible.	
		2	Sampling equipment, tools and monitoring well covers can cause tripping hazard	Keep equipment picked up and use TRACK to assess changes.	
2	Open wells to equil brate and gauge wells	1	When squatting, personnel can be difficult to see by vehicular traffic.	Wear class II traffic vest if wells are located proximal to vehicular traffic. Use tall cones and the buddy system if practicable.	
		2	Pinchpoints on well vault can pinch or lacerate fingers	Use correct tools to open well vault/cap. Wear leather gloves when removing well vault lids, and chemical protective gloves while gauging. Wear proper PPE including safety boots, knee pads and safety glasses.	
		3	Lifting sampling equipment can cause muscle strain	Unload as close to work area as safely possible; use proper lifting and reaching techniques and body positioning; don't carry more than you can handle, and get help moving heavy or awkward objects.	
		4	Pressure can build up inside well causing cap to release under pressure	Keep head away from well cap when removing. If pressure relief valves are on well use prior to opening well	
3	Begin Purging Well and Collecting Parameter Measurements	1	Electrical shock can occur when connecting/disconnecting pump from the battery.	Make sure equipment is turned off when connecting/disconnecting. Wear leather gloves. Use GFCIs when using powered tools and pumps. Do not use in the rain or run electrical cords through wet areas.	
		2	Purge water can spill or leak from equipment	Stop purging activities immediately, stop leakage and block any drainage grate with absorbent pads. Call PM to notify them of any reportable spill.	
		3	Water spilling on the ground can cause muddy/slippery conditions	Be careful walking in work area when using plastic around well to protect from spillage	
		4	Lacerations can occur when cutting materials such as plastic tubing	When cutting tubing, use tubing cutter. No open fixed blades should ever be used. When possible wear work gloves, leather type.	
		5	Purge water can splash into eyes	Pour water slowly into buckets/drums to minimize splashing. Wear safety glasses.	

4	Collect GW Sample	1	Sample containers could break or leak preservative	Discard any broken sampleware or glass properly. Do not overtighten sample containers. Wear chemical protective gloves.	
5	Staging of Well Purge water	1	Muscle strains can occur when moving purge water	If using buckets, do not fill buckets up to the top. Always keep lid on buckets when traveling or moving them to another location. Only half fill buckets so when dumping the buckets weigh less.	

PPE — Personal Protective Equipment

Type	Personal Protective Equipment	Description	Required
Dermal Protection	long sleeve shirt/pants		Recommended
Eye Protection	safety glasses		Required
Foot Protection	steel-toe boots		Required
Hand Protection	chemical resistant gloves (specify type)	Nitrile	Required
	work gloves (specify type)	Leather	Required
Miscellaneous PPE	other	Knee pads	Recommended
	traffic vest--Class II or III		Required

Supplies

Type	Supply	Description	Required
Communication Devices	mobile phone		Required
Decontamination	Decon supplies (specify type)	alconox, DI water, spray bottle	Required
Miscellaneous	fire extinguisher		Required
	first aid kit		Required
	flashlight		Required
Personal	eye wash (specify type)	bottle	Required
	insect repellant		Recommended
	sunscreen		Recommended
Traffic Control	barricades		Recommended
	traffic cones		Required

Review Comments

Reviewer		Comments
Employee: **Role** **Review Type** **Completed Date**	Nail, Jason Quality Reviewer NA 4/19/2013	Great detail in this JSA. 2 comments Job Step 1: hazard of potentially being hit by vehicle. The JSA states use of "cones" as applicable. CVX policy is 48" delineators with high visibility flagging, not just cones. Job step 2: potential hazrd is lited as lifting equipment. This hazard really belongs in Job step #2, and consider explicitly saying that moving anyhting over 50-lbs is a threshold for needing a helper.

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Chain-of-Custody, Handling, Packing and Shipping

Rev. #: 2

Rev Date: March 6, 2009

Approval Signatures

Prepared by: _____ Date: 3/6/09
Caron Koll

Reviewed by: _____ Date: 3/6/09
Jane Kennedy(Technical Expert)

I. Scope and Application

This Standard Operating Procedure (SOP) describes the chain-of-custody, handling, packing, and shipping procedures for the management of samples to decrease the potential for cross-contamination, tampering, mis-identification, and breakage, and to insure that samples are maintained in a controlled environment from the time of collection until receipt by the analytical laboratory.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training, including 40-hour HAZWOPER training, Department of Transportation (DOT) training, site supervisor training, and site-specific training, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following list provides materials that may be required for each project. Project documents and sample collection requirements should be reviewed prior to initiating field operations:

- indelible ink pens (black or blue);
- polyethylene bags (resealable-type);
- clear packing tape, strapping tape, duct tape;
- chain of custody
- DOT shipping forms, as applicable
- custody seals or tape;
- appropriate sample containers and labels,;
- insulated coolers of adequate size for samples and sufficient ice to maintain 4°C during collection and transfer of samples;
- wet ice;
- cushioning and absorbent material (i.e., bubble wrap or bags);

- temperature blank
- sample return shipping papers and addresses; and
- field notebook.

IV. Cautions

Review project requirements and select appropriate supplies prior to field mobilization.

Insure that appropriate sample containers with applicable preservatives, coolers, and packing material have been supplied by the laboratory.

Understand the offsite transfer requirements for the facility at which samples are collected.

If overnight courier service is required schedule pick-up or know where the drop-off service center is located and the hours of operation. Prior to using air transportation, confirm air shipment is acceptable under DOT and International Air Transport Association (IATA) regulation

Schedule pick-up time for laboratory courier or know location of laboratory/service center and hours of operation.

Understand DOT and IATA shipping requirements and evaluate dangerous goods shipping regulations relative to the samples being collected (i.e. complete an ARCADIS shipping determination). Review the ARCADIS SOPs for shipping, packaging and labeling of dangerous goods. Potential samples requiring compliance with this DOT regulation include:

- Methanol preservation for Volatile Organic Compounds in soil samples
- Non-aqueous phase liquids (NAPL)

V. Health and Safety Considerations

Follow health and safety procedures outlined in the project/site Health and Safety Plan (HASP).

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

Some sample containers contain preservatives.

- The preservatives must be retained in the sample container and should in no instance be rinsed out.
- Preservatives may be corrosive and standard care should be exercised to reduce potential contact to personnel skin or clothing. Follow project safety procedures if spillage is observed.
- If sample container caps are broken discard the bottle. Do not use for sample collection.

VI. Procedure

Chain-of-Custody Procedures

1. Prior to collecting samples, complete the chain-of-custody record header information by filling in the project number, project name, and the name(s) of the sampling technician(s) and other relevant project information. Attachment 1 provides an example chain-o- custody record

2. Chain-of-custody information MUST be printed legibly using indelible ink (black or blue).

3. After sample collection, enter the individual sample information on the chain-of-custody:

    a. Sample Identification indicates the well number or soil location that the sample was collected from. Appropriate values for this field include well locations, grid points, or soil boring identification numbers (e.g., MW-3, X-20, SB-30). When the depth interval is included, the complete sample ID would be “SB-30 (0.5-1.0) where the depth interval is in feet. Please note it is very important that the use of hyphens in sample names and depth units (i.e., feet or inches) remain consistent for all samples entered on the chain-of-custody form. DO NOT use the apostrophe or quotes in the sample ID. Sample names may also use the abbreviations “FB,” “TB,” and “DUP” as prefixes or suffixes to indicate that the sample is a field blank, trip blank, or field duplicate, respectively. NOTE: The sample

nomenclature may be dictated by the project database and require unique identification for each sample collected for the project. Consult the project data management plan for additional information regarding sample identification.

b. List the date of sample collection. The date format to be followed should be mm/dd/yy (e.g., 03/07/09) or mm/dd/yyyy (e.g. 03/07/2009).

c. List the time that the sample was collected. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.

d. The composite field should be checked if the sample is a composite over a period of time or from several different locations and mixed prior to placing in sample containers.

e. The “Grab”. field should be marked with an “X” if the sample was collected as an individual grab sample. (e.g. monitoring well sample or soil interval).

f. Any sample preservation should be noted.

g. The analytical parameters that the samples are being analyzed for should be written legibly on the diagonal lines. As much detail as possible should be presented to allow the analytical laboratory to properly analyze the samples. For example, polychlorinated biphenyl (PCB) analyses may be represented by entering “PCBs” or “Method 8082.” Multiple methods and/or analytical parameters may be combined for each column (e.g., PCBs/VOCs/SVOCs or 8082/8260/8270). These columns should also be used to present project-specific parameter lists (e.g., Appendix IX+3 target analyte list. Each sample that requires a particular parameter analysis will be identified by placing the number of containers in the appropriate analytical parameter column. For metals in particular, indicate which metals are required.

h. Number of containers for each method requested. This information may be included under the parameter or as a total for the sample based on the chain of custody form used.

i. Note which samples should be used for site specific matrix spikes.

j. Indicate any special project requirements.

k. Indicate turnaround time required.

l. Provide contact name and phone number in the event that problems are encountered when samples are received at the laboratory.

m. If available attach the Laboratory Task Order or Work Authorization forms

n. The remarks field should be used to communicate special analytical requirements to the laboratory. These requirements may be on a per sample basis such as “extract and hold sample until notified,” or may be used to inform the laboratory of special reporting requirements for the entire sample delivery group (SDG). Reporting requirements that should be specified in the remarks column include: 1) turnaround time; 2) contact and address where data reports should be sent; 3) name of laboratory project manager; and 4) type of sample preservation used.

o. The “Relinquished By” field should contain the signature of the sampling technician who relinquished custody of the samples to the shipping courier or the analytical laboratory.

p. The “Date” field following the signature block indicates the date the samples were relinquished. The date format should be mm/dd/yyyy (e.g., 03/07/2005).

q. The “Time” field following the signature block indicates the time that the samples were relinquished. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.

r. The “Received By” section is signed by sample courier or laboratory representative who received the samples from the sampling technician or it is signed upon laboratory receipt from the overnight courier service.

3. Complete as many chain-of-custody forms as necessary to properly document the collection and transfer of the samples to the analytical laboratory.

4. Upon completing the chain-of-custody forms, forward two copies to the analytical laboratory and retain one copy for the field records.

5. If electronic chain-of-custody forms are utilized, sign the form and make 1 copy for ARCADIS internal records and forward the original with the samples to the laboratory.

Handling Procedures

1. After completing the sample collection procedures, record the following information in the field notebook with indelible ink:

   - project number and site name;
   - sample identification code and other sample identification information, if appropriate;
   - sampling method;
   - date;
   - name of sampler(s);
   - time;
   - location (project reference);
   - location of field duplicates and both sample identifications;
   - locations that field QC samples were collected including equipment blanks, field blanks and additional sample volume for matrix spikes; and
   - any comments.

2. Complete the sample label with the following information in indelible ink:

   - sample type (e.g., surface water);
   - sample identification code and other sample identification information, if applicable;
   - analysis required;
   - date;
   - time sampled; and
   - initials of sampling personnel;

- sample matrix; and
- preservative added, if applicable.

3. Cover the label with clear packing tape to secure the label onto the container and to protect the label from liquid.

4. Confirm that all caps on the sample containers are secure and tightly closed.

5. In some instances it may be necessary to wrap the sample container cap with clear packing tape to prevent it from becoming loose.

6. For some projects individual custody seals may be required. Custody seal evidence tape may be placed on the shipping container or they may be placed on each sample container such that the cooler or cap cannot be opened without breaking the custody seal. The custody seal should be initialed and dated prior to relinquishing the samples.

Packing Procedures

Following collection, samples must be placed on wet ice to initiate cooling to 4°C immediately. Retain samples on ice until ready to pack for shipment to the laboratory.

1. Secure the outside and inside of the drain plug at the bottom of the cooler being used for sample transport with “Duct” tape.

2. Place a new large heavy duty plastic garbage bag inside each cooler

3. Place each sample bottle wrapped in bubble wrap inside the garbage bag. VOC vials may be grouped by sample in individual resealable plastic bags). If a cooler temperature blank is supplied by the laboratory, it should be packaged following the same procedures as the samples. If the laboratory did not include a temperature blank, do not add one. Place 1 to 2 inches of cushioning material (i.e., vermiculite) at the bottom of the cooler.

4. Place the sealed sample containers upright in the cooler.

5. Package ice in large resealable plastic bags and place inside the large garbage bag in the cooler. Samples placed on ice will be cooled to and maintained at a temperature of approximately 4°C.

6. Fill the remaining space in the cooler with cushioning material such as bubble wrap. The cooler must be securely packed and cushioned in an upright position and be surrounded (Note: to comply with 49 CFR 173.4, filled cooler must not exceed 64 pounds).

7. Place the completed chain-of-custody record(s) in a large resealable bag and tape the bag to the inside of the cooler lid.

8. Close the lid of the cooler and fasten with packing tape.

9. Wrap strapping tape around both ends of the cooler.

10. Mark the cooler on the outside with the following information: shipping address, return address, “Fragile, Handle with Care” labels on the top and on one side, and arrows indicating “This Side Up” on two adjacent sides.

11. Place custody seal evidence tape over front right and back left of the cooler lid, initial and date, then cover with clear plastic tape.

Note: Procedure numbers 2, 3, 5, and 6 may be modified in cases where laboratories provide customized shipping coolers. These cooler types are designed so the sample bottles and ice packs fit snugly within preformed styrofoam cushioning and insulating packing material.

Shipping Procedures

1. All samples will be delivered by an express carrier within 48 hours of sample collection. Alternatively, samples may be delivered directly to the laboratory or laboratory service center or a laboratory courier may be used for sample pickup.

2. If parameters with short holding times are required (e.g., VOCs [EnCore™ Sampler], nitrate, nitrite, ortho-phosphate and BOD), sampling personnel will take precautions to ship or deliver samples to the laboratory so that the holding times will not be exceeded.

3. Samples must be maintained at 4°C±2°C until shipment and through receipt at the laboratory

4. All shipments must be in accordance with DOT regulations and ARCADIS dangerous goods shipping SOPs.

5. When the samples are received by the laboratory, laboratory personnel will complete the chain-of-custody by recording the date and time of receipt of samples, measuring and recording the internal temperature of the shipping container, and checking the sample identification numbers on the containers to ensure they correspond with the chain-of-custody forms.

Any deviations between the chain-of-custody and the sample containers, broken containers, or temperature excursions will be communicated to ARCADIS immediately by the laboratory.

VII. Waste Management

Not applicable

VIII. Data Recording and Management

Chain-of-custody records will be transmitted to the ARCADIS PM or designee at the end of each day unless otherwise directed by the ARCADIS PM. The sampling team leader retains copies of the chain-of-custody forms for filing in . the project file. Record retention shall be in accordance with project requirements.

IX. Quality Assurance

Chain-of-custody forms will be legibly completed in accordance with the applicable project documents such as Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), Work Plan, or other project guidance documents. A copy of the completed chain-of-custody form will be sent to the ARCADIS Project Manager or designee for review.

X. References

Not Applicable

Attachment 1

ARCADIS
Infrastructure, environment, facilities

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page ___ of ___

Lab Work Order #

Send Results to:

Contact & Company Name: | Telephone:

Address: | Fax:

City | State | Zip | E-mail Address:

Project Name/Location (City, State): | Project #:

Sampler's Printed Name: | Sampler's Signature:

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix

Preservative								
Filtered (✓)								
# of Containers								
Container Information								

PARAMETER ANALYSIS & METHOD

REMARKS

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil | SE - Sediment | NL - NAPL/Oil
W - Water | SL - Sludge | SW - Sample Wipe
T - Tissue | A - Air | Other: _____

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name:	Cooler Custody Seal (✓)	Printed Name:	Printed Name:	Printed Name:	Printed Name:
☐ Cooler packed with ice (✓)	☐ Intact ☐ Not Intact	Signature:	Signature:	Signature:	Signature:
Specify Turnaround Requirements:	Sample Receipt:	Firm:	Firm/Courier:	Firm/Courier:	Firm:
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time:	Date/Time:	Date/Time:	Date/Time:

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Distribution: **WHITE – Laboratory returns with results** **YELLOW – Lab copy** **PINK – Retained by BBL**